

REMARKS/ARGUMENTS

Applicant has fully considered the Non-Final Office Action mailed April 19, 2006 and request reconsideration of the application.

In the Office Action, the Examiner objected to the abstract, the specification, and the claims for certain informalities. The Examiner rejected claims 1-3 and 5-10 under 35 U.S.C. § 112, second paragraph, as being indefinite. The Examiner rejected claims 1-3 under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential steps. Claims 4, 5, and 10 were rejected under 35 U.S.C. § 102(b), and claims 1-3 and 6-9 were rejected under 35 U.S.C. § 103(a).

In this response, Applicant adds claims 11-20. Claims 1-20 are pending in the application.

New claim 11 depends from claim 3 and recites specific alloying metal ions. New claims 12-14 and 18-20, which depend from claims 4 and 1, respectively, each recite that the additive in the bath or process comprises a specific N-allyl substituted amine. Support for these specific compositions can be found in the originally filed specification in the description that relates to the general formula for the N-allyl substituted amine additives and the possible R and/or X^m substituents (e.g., page 4, lines 30-31 through page 5, lines 1-7) and in the table on page 8. New claims 15-17 recite that the (N-allyl substituted amine) additive is present in the bath in certain amounts or concentrations. Support for these claims can be found in the originally filed specification at page 5, lines 7-11.

The objections to the specification and claims were primarily based on use of the word "or" where the word "of" should have been used instead. The specification and claims are amended herein to make the appropriate changes to the situations identified by the Examiner. Applicant requests that the objections be removed.

The Examiner rejected claims 1-3 and 5-10 under 35 U.S.C. § 112, second paragraph as being indefinite. Applicant traverses these rejections.

The Examiner rejected claim 1 on the grounds that phrase "the metal substrate" in line 3 lacks antecedent basis. Applicant amends claim 1 to delete the word "the" before the phrase "metal substrate" and insert the word "a." Applicant submits that this clarification remedies the Examiner's concern with respect to claim 1 and requests that the rejection of claim 1 under § 112 be withdrawn.

The Examiner's rejection of claims 2 and 10 related to the presence of the phrase "n-valent anion" in those claims. Applicant notes that "the group of chloride, bromide, fluoride, sulfate, acetate, and tetrafluoroborate" does further limit the n-valent inorganic or organic anion recited in claims 1 and 4 respectively. Thus, the phrase "n-valent anion" is redundant in claims 2 and 10 and Applicant deletes that phrase from lines 1 of claims 2 and 10, respectively.

Additionally, the Examiner rejected claim 2 for having improper Markush group language. Claim 2 is amended to insert the word "consisting" after the word "group" in line 2 of claim 2, respectively. Applicant submits that the clarifications to claims 2 and 10 remedy the Examiner's concerns regarding these claims. Applicant requests that the rejection of claims 2 and 10 under 35 U.S.C. § 112 be withdrawn.

The Examiner rejected claim 9 under § 112 for having improper Markush group language. Claim 9 is amended herein to include the word "consisting" after the word "group" in line 2 of claim 9. Applicant submits that this clarification remedies the Examiner's concern about claim 9 and request that the rejection of claim 9 under § 112 be withdrawn.

The Examiner rejected claims 5-8 as being indefinite and specifically stated that the phrase "Class I brightener" and/or "Class II brightener" are indefinite. Applicant traverses these rejections. First, the Examiner only summarily states that these terms are indefinite and fails to provide any analysis as to why these phrases are indefinite. See MPEP § 2173.02 (8th Edition, Rev. 3, August 2005). Second, Applicant submits that the terms "Class I brightener" and "Class II brightener" are terms known in the plating art and that these terms are discernable to a person skilled in the plating arts. Applicant's specification discusses Class I and Class II brighteners and their respective functions in a nickel bath. (See, e.g. pages 1-2). Moreover, Applicant's specification effectively defines these terms. In another rejection, the Examiner even relies on a reference (Lowenheim) that discusses Class I and Class II brighteners in nickel baths and describes the function of such brighteners in nickel baths and some types of compounds or chemicals that are used as such brighteners.¹ By doing so, the Examiner actually demonstrates that these terms are

¹ Applicant refers to specification of the present Application and the Lowenheim reference only to demonstrate that the terms Class I and Class II brighteners are definite and readily ascertainable and understood by persons skilled in the art. Applicant's reference to these disclosures in no way limits the Class I or Class II brighteners recited in the claims to specific materials. Rather, as used in the present claims, Class I or Class II brighteners include any materials now known or later developed or discovered that are suitable as Class I or Class II brighteners.

not indefinite. Therefore, Applicant submits that these phrases are definite and request that the rejection of claims 5-8 under § 112 be withdrawn.

The Examiner rejected claims 1-3 under 35 U.S.C. § 112, second paragraph as being incomplete for omitting essential steps. Applicant traverses this rejection.

The Examiner stated that the omitted steps are electrodepositing a nickel or nickel alloy on a substrate. Claim 1 is amended herein to recite that the process also includes electrodepositing nickel onto the metal substrate, and claim 3 is amended herein to recite that the process of electrodepositing nickel onto the metal substrate comprises electrodepositing a nickel-alloy onto the metal substrate. Applicant submits that these clarifications remedy the Examiner's concerns about claims 1-3 and request that the rejection of claims 1-3 under 35 U.S.C. § 112 be withdrawn.

The Examiner rejected claims 4, 5, and 10 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,133,006 to Ostrow et al. Applicant traverses this rejection.

Claims 4 and 5 are clarified herein to delete the phrase "propyn" from the list of functional groups from which R_1 , R_2 , and/or R_3 may be selected. The additives disclosed in Ostrow et al. require an alkyne group. That is, Ostrow does not teach or suggest additives that do not include an alkyne. Alkyne substituents are not necessary in the additives $H_2C=CHCH_2NR_1R_2$ or $[H_2C=CHCH_2N^+R_1R_2R_3]_nX^{n-}$ set forth in the present claims. The claims, as amended, do not recite an alkyne, such as propyn, as a possible substituent for the R groups in the recited formulas. Consequently, Ostrow fails to anticipate claims 4, 5, and 10. Applicant requests that the rejection under 35 U.S.C. § 102(b) be withdrawn.

The Examiner rejected claims 1-3 and 6-9 under 35 U.S.C. § 103(a) as being unpatentable over Ostrow in combination with Lowenheim (Electroplating, c. 1978, pages 205-220). Applicant traverses this rejection.

Applicant notes that claims 1 and 6-8 are amended herein to delete propyn as one of the possible substituents for the R groups in the N-allylanilines. Thus, for the reasons previously discussed with respect to claims 4, 5, and 10, Ostrow fails to disclose additives of the formulas $H_2C=CHCH_2NR_1R_2$ or $[H_2C=CHCH_2N^+R_1R_2R_3]_nX^{n-}$ as set forth in the claims. The Examiner only relies on Lowenheim for teaching various aspects of an electroplating process or an acidic plating bath and fails to teach or suggest any additives of the formulas $H_2C=CHCH_2NR_1R_2$ or $[H_2C=CHCH_2N^+R_1R_2R_3]_nX^{n-}$. Therefore, the combination of Ostrow and Lowenheim fails to teach or suggest the process for plating baths recited in claims 1-3

and 6-9. Applicant requests that the rejections under 35 U.S.C. § 103(a) be withdrawn.


CONCLUSION

In view of the previous remarks and arguments, Applicant submits that the pending claims (claims 1-20) are in condition for allowance.

Respectfully submitted,

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